

CLAIMS

1. Method of service provision for a communications network comprising resources (NEQ, NEL) suitable for fulfilling an assigned network role, defined by policy rules, characterized in that it consists, in the case of a service provision request, in selecting a resource that satisfies a network role corresponding to the said service requested, from among certain resources (NEQ, NEL) of the network that are not yet associated with a processing role associated with the said service requested, then in associating with this selected resource a processing role associated with the said requested service, and in determining from among a set of policy rules each policy rule defining the network role associated with the said processing role so as to transmit it to the said resource selected with a view to its instigation.
2. Method according to claim 1, characterized in that the said resources are selected from among registered resources (NEQ, NEL).
3. Method according to claim 2, characterized in that each registered resource (NEQ, NEL) is designated by an identifier stored in correspondence with traffic processing capacities, and in that the said resource selection consists in verifying whether a registered resource has capacities making it possible to fulfill the network role corresponding to the said service chosen.
4. Method according to claim 3, characterized in that the said resource identifiers are stored in correspondence with network role and processing role identifiers which are possibly associated therewith, in a registrations memory (M3).
5. Method according to one of claims 1 to 4, characterized in that the said service provision request is transmitted accompanied by a definition of the associated network role and by a definition of the associated processing role.
6. Method according to one of claims 1 to 4, characterized in that the network roles are stored in a roles memory (M2), and in that on receipt of a service provision request the corresponding network role is determined in the said roles memory (M2), before proceeding with the said selection.
7. Method according to one of claims 1 to 6, characterized in that the said policy rules are stored in correspondence with the associated network role, in a rules memory (M1).

8. Method according to one of claims 1 to 7, characterized in that each network role is defined by at least one resource capacity.
9. Method according to one of claims 1 to 8, characterized in that a network role is modified when no resource fulfills the said network role and/or when a resource fulfilling the said network role presents capacities compatible with the said modification.
10. Method according to one of claims 1 to 9, characterized in that a network role is deleted when no resource fulfills the said network role.
11. Method according to one of claims 8 to 10, characterized in that a network role is assigned directly to a resource when the said resource has capacities including each capacity designated by the said network role.
12. Method according to one of claims 1 to 11, characterized in that at least two different network roles are assigned to certain resources.
13. Method according to one of claims 1 to 12, characterized in that before proceeding with the said resource selection, a preliminary phase is performed consisting in determining in the said set of policy rules whether it comprises policy rules defining the network role corresponding to the service requested.
14. Resources management system (RMS), for a communications network comprising a multiplicity of resources (NEQ, NEL) suitable for fulfilling an assigned network role, defined by policy rules, the said system comprising policy management means (PM) suitable for formulating the said policy rules and a policy server (PS) suitable for storing the said policy rules and for transmitting them selectively to the said resources (NEQ, NEL) so that they instigate them, characterized in that it furthermore comprises monitoring means (NRC) coupled to the said policy server (PS) and to the said resources (NEQ, NEL), and devised, in case of receipt of a service provision request, to select a resource that satisfies a network role corresponding to the said service requested, from among certain resources of the network that are not yet associated with a processing role associated with the said service requested, and to associate with this selected resource a processing role associated with the said service requested, and in that the said policy server (PS) is devised, on receipt of the designation of the said selected resource and of the associated network and processing roles, to determine from

among the said policy rules stored each policy rule defining the network role associated with the said processing role so as to transmit it to the said resource.

- 5 **15.** System according to claim 14, characterized in that the said monitoring means (NRC) are devised so as to determine the capacities of certain at least of the resources (NEQ, NEL) of the network in such a way as to store them in a registrations memory (M3) in correspondence with a resource identifier, said resources stored then being said to be registration sources.
- 10 **16.** System according to one of claims 14 and 15, characterized in that the said monitoring means (NRC) are devised to select the said resources from among resources (NEQ, NEL) registered in a registrations memory (M3) in the form of a resource identifier and of associated capacities.
- 15 **17.** System according to claim 16, characterized in that the said monitoring means (NRC) are devised to determine in the said registrations memory (M3) each resource registered having capacities making it possible to fulfill the network role corresponding to the said chosen service.
- 20 **18.** System according to one of claims 15 to 17, characterized in that the said monitoring means (NRC) are devised to store the said resource identifiers in the said registrations memory (M3) in correspondence with network role and processing role identifiers which are possibly associated therewith.
- 25 **19.** System according to one of claims 14 to 18, characterized in that said monitoring means (NRC) comprise graphics interface means (GI) suitable for allowing the communication by a user of a definition of network role associated with a requested service and/or of a definition of processing role associated with the said requested service.
- 30 **20.** System according to one of claims 14 to 18, characterized in that the said monitoring means (NRC), on the one hand, comprise graphics interface means (GI) suitable for allowing the communication by a user of the definitions of processing roles associated with a requested service, and of definitions of network roles, and on the other hand, are devised to store the said network roles definitions communicated in a roles memory (M2) and, in case of receipt of a service provision request, to determine in the said roles memory (M2) a network role corresponding to
35 the said service, before performing the said selection.

- 5 **21.** System according to one of claims 19 and 20, characterized in that the monitoring means (NRC) are devised, on receipt of a request originating from the said graphics interface means (GI) and querying a chosen modification of a network role definition, to proceed with the modification of the definition of the said network role when no resource fulfills the said network role or when a resource (NEQ, NEL) fulfills the said network role and has capacities compatible with the said modification.
- 10 **22.** System according to one of claims 19 to 21, characterized in that the said monitoring means (NRC) are devised, on receipt of a request originating from the said graphics interface means (GI) and querying a deletion of a network role definition, to proceed with the said deletion when no resource (NEQ, NEL) fulfills the said network role.
- 15 **23.** System according to one of claims 19 to 22, characterized in that the said monitoring means (NRC) are devised to assign a complementary network role to a resource (NEQ, NEL) when the said resource has capacities including each capacity designated by the said network role.
- 20 **24.** System according to one of claims 14 to 23, characterized in that the said monitoring means (NRC) are suitable for assigning at least two different network roles to certain resources (NEQ, NEL).
- 25 **25.** System according to one of claims 14 to 24, characterized in that the said monitoring means (NRC) are devised, in case of receipt of a service provision request and before proceeding with the said resource selection, to address to the said policy server (PS) a request for verification of existence of policy rule(s) corresponding to the said service requested, and, in case of receipt of a message signaling such existence, to proceed with the said selection.
- 30 **26.** System according to one of claims 14 to 25, characterized in that it comprises a rules memory (M1) accessible to the said policy server (PS) and storing the said policy rules in correspondence with the associated network role.
- 35 **27.** System according to one of claims 14 to 26, characterized in that it comprises mediation means (MM) interfaced between the said resources (NEQ, NEL), on the one hand, and the said policy server (PS) and the said monitoring means (NRC), on the other hand, and devised to allow a dialog, on the one hand, between the said resources (NEQ,

NEL) and the said policy server (PS) or the said monitoring means (NRC), and on the other hand, between the said policy server (PS) and the said monitoring means (NRC).

5 **28.** Management server (MS) of a network management system (NMS), characterized in that it comprises a resources management system (RMS) according to one of claims 14 to 27.

10 **29.** Use of the method, resources management system (RMS) and management server (MS) according to one of the preceding claims for resources chosen from a group comprising network equipment (NEQ), the elements (NEL) of network equipment (NEQ) and network connections.